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VOCATIONAL EDUCATION MASTER PLAN REPORT.
GROSSMONT UNION HIGH SCHOOL DISTRICT, CALIF.

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THIS REPORT COVERS THE FIRST TWO PHASES OF A PROPOSED SIX-PHASE PLAN. A COMMITTEE OF ONE REPRESENTATIVE FROM EACH HIGH SCHOOL, A VOCATIONAL COUNSELOR, AND THE DISTRICT VOCATIONAL EDUCATION CONSULTANT DEVELOPED GUIDELINES FOR THE MASTER PLAN BASED ON OPINIONS AND RECOMMENDATIONS OF AN 18-MEMBER COUNCIL OF HIGH SCHOOL VOCATIONAL EDUCATION TEACHERS. THE COMMITTEE (1) STUDIED CURRENT VOCATIONAL EDUCATION PROGRAMS, LOCAL AND STATE EMPLOYMENT CONDITIONS AND TRENDS, THE STUDENT POPULATION, AND PRESENT FACILITIES AND EQUIPMENT, (2) SET UP AS A PILOT PROJECT A 3-WEEK AIRCRAFT ASSEMBLY OCCUPATIONAL TRAINING COURSE, AND (3) MADE A PRELIMINARY EVALUATION OF DEMAND OCCUPATIONS. CURRICULAR RECOMMENDATIONS WERE TO (1) IMPLEMENT A FOUR-TRACK PLAN WITHIN THE SCHOOL ACCORDING TO STUDENT COMMITMENT, (2) PROVIDE MORE EFFECTIVE VOCATIONAL ORIENTATION AT THE EIGHTH GRADE LEVEL, (3) ESTABLISH A VOCATIONAL EXPLORATORY PROGRAM AT THE NINTH GRADE LEVEL, (4) CREATE INTERDISCIPLINARY COORDINATION IN ALL RELATED COURSES IN HIGH SCHOOL, (5) PROVIDE A CONCENTRATION OF VOCATIONAL CLASSES IN 11TH AND 12TH GRADES, (6) PROVIDE FINAL SPECIFIC OCCUPATIONAL TRAINING NEAR THE END OF THE HIGH SCHOOL PROGRAM, AND (7) ESTABLISH A DISTRICT RESPONSIBILITY FOR PLACING STUDENTS IN GAINFUL EMPLOYMENT. ORGANIZATIONAL RECOMMENDATIONS CONCERNED (1) ESTABLISHING A VOCATIONAL EDUCATION COUNCIL, SPECIAL COMMITTEES, AND A VOCATIONAL ADVISORY COUNCIL, (2) COORDINATING THE DISTRICT ORGANIZATION, (3) STUDYING FACILITIES AND SERVICE, (4) PLACING STUDENTS, AND (5) INITIATING OTHER IMPROVEMENTS. EACH OF THE RECOMMENDATIONS IS DISCUSSED IN DETAIL. A SUMMARY OF THE SUMMER EXPERIMENT IN AIRCRAFT ASSEMBLY AND SUMMARY DATA FROM RESEARCH ARE INCLUDED. (BS)

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VOCATIONAL EDUCATION
Master Plan Report

September 1966

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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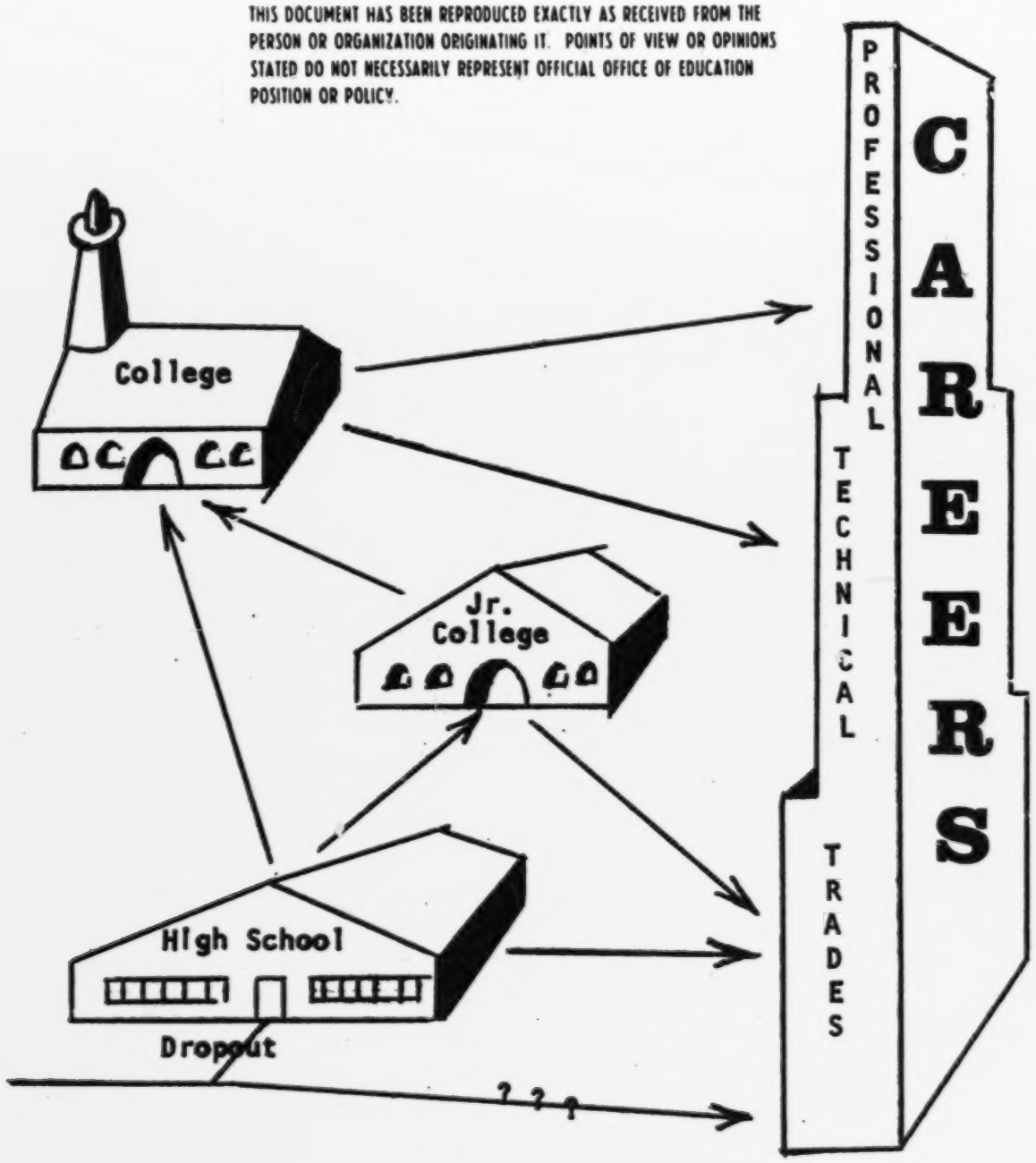

VT 02886

GROSSMONT UNION HIGH SCHOOL DISTRICT, Calif

PROLOGUE

Excerpts from State Board Policy Statement - May 12, 1966

"Effective vocational education has traditionally been one of the fundamental goals of public education in this country. The concept of the school's responsibility for helping to develop each individual's capabilities for productive and responsible citizenship has long been part of the democratic heritage.

A new and heightened focus upon vocational education is required in terms of its significance for the economic strength and social stability of our society as a whole. The importance of both proficiency and flexibility within the total work force has been dramatically underscored by the current technological revolution. Increased emphasis upon equality of opportunity is reflected in increased recognition of the vital role of learning experiences designed primarily to fit individuals for gainful employment. Because of the importance of this function of the public schools in a rapidly changing world, there is need for imaginative new approaches, cooperative ventures among districts, and retraining of the unemployed and the underemployed.

Individual economic security will forever remain an illusion without opportunity to prepare for--and advance in--work careers, for all people, for all occupations, and in all locations."

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I. INTRODUCTION

A. PHASE I - Preparatory

A District Vocational Education Council met during the Spring Semester of 1966 to prepare for the work of the Master Plan Committee. The council was composed of 18 members: two from each high school (one representing Industrial Education and one Business Education), and two members representing Agricultural Education and Vocational Homemaking. This permitted each high school's vocational education departments to express opinions on the directions vocational education should take and to make recommendations to be explored during the summer. The Director of Educational Operations represented the administration on this council.

Members of this council contributed their time on a voluntary basis. Their names and schools are found in the appendix of the report.

B. PHASE II - Summer Committee

A representative from each high school, a vocational counselor, and the District Vocational Education Consultant met for seven weeks (4 hours a day) to develop guidelines for a Master Plan for Vocational Education for the Grossmont District. Their names and schools are listed in the appendix. One-half the cost of this committee was obtained through a VEA proposal.

C. WHY WAS A MASTER PLAN STUDY NEEDED?

This District, like many other districts in California, has experienced rapid growth during the last ten years. New schools have been built and facilities added under the pressure of immediate need for classroom space, with little time for valid curricular research or long-range planning. The

impact of socio-economic shifts in the student population, the addition of a District Junior College, and dynamic changes in the local industrial economy require reassessment of present vocational programs.

Competence and skill of a high order are now required for most occupational fields--even at the entry level. This means students seeking work upon graduation must be trained for employment available for them. Having limited education and skills means that, although the graduate may find a job, he will have little outlet for his abilities and ambitions, and cannot rise to reach his potential.

Every advance in technology makes many jobs obsolete, others routine, increases the interdependence of workers and creates the need for new knowledge and skills. Jobs that once demanded only skills now also require intellectual preparation as well. There are therefore, two types of vocational education needed:

First, the general vocational knowledges which include basic reading, writing, arithmetic, applied scientific principles, the ability to use certain common tools, the techniques of finding a job, and certain trait training such as the ability to work well with others, to take supervision and to be reliable. This is no longer enough in today's labor market.

The second type of vocational education needed is "occupational." This opens the door marked Employees Entrance. An applicant who enters the personnel office with some knowledge of the industry, with some skill in the work he will be doing, and the recommendation of his teacher, is already half-hired. If he can add part-time work experience in the field or if industry has helped to train him, he is certain of a job that he wants.

FUTURE VOCATIONAL TRAINING REQUIREMENTS OF THE DISTRICT CANNOT BE MET WITHOUT CAREFUL ADVANCE PLANNING SO THAT ADDITIONS OF SPACE AND EQUIPMENT MAKE THE BEST POSSIBLE COMMITMENT OF MONEY AND STAFF.

II. WORK OF THE COMMITTEE

A. ACTIVITIES OF THE COMMITTEE

In order to meet its commitment, the committee decided to:

1. Become better informed on what is being done in vocational education throughout the State.
2. Study local and State employment conditions and trends.
3. Study student population as related to vocational education needs.
4. Examine present facilities and equipment in relation to necessary remodeling and upgrading to reach vocational education standards.
5. Consider problems and possibilities of articulation with Adult School and Junior College.
6. Talk with the District staff, County Vocational Educators, Business and Industrial leaders.
7. Visit industrial and educational facilities.
8. Set up as a pilot project a three week occupational training course in cooperation with Ryan Aeronautical Company. This course took thirty 1966 graduates of Industrial Arts programs representing all schools, (the majority still unemployed) and trained them in Aircraft Assembly so they could be employed by Ryan. See Appendix.
9. Make a preliminary evaluation of occupations which seem to be in demand. Programs will be recommended to the Vocational Education Advisory Council of the District for further study before introduction into the curricula. See page 11 for Possible Occupational Curricula.

These activities were carried out to the limit of the time available. The Committee soon became aware of the immensity of the task it faced. This will be the first District to design a Master Plan for Vocational Education for a Comprehensive High School District, so much of the work had to be exploratory. It was difficult to find valid research on student populations. Searching for trends and employment patterns took up a considerable amount of time. A good beginning has been made.

B. FURTHER ORGANIZATION

The following report is divided into three sections. They are:

Section III (A summary of major recommendations)

a. Organizational

b. Curricular

c. Phasing (timing)

Section IV (specific conclusions, more detailed explanations of the major recommendations, and other recommendations not classified.)

Section V (an appendix of information and data useful to future vocational education committees).

The greater part of the committee work was directed toward meeting the needs of those students who will not complete two or four year college degrees - since employability is essential for them.

C. CONSULTANTS

The following people met with the committee for discussion purposes. They represent a wide sector of business, industry, and vocational education from this community and from other parts of the State:

Ellen Abbott, Director, Vocational Nursing, Grossmont District

Charles Brady, Consultant, Vocational Education, Ventura County

Robert Craig, Consultant Coordinator, Center for Technical Education, San Francisco State College

Jim Dyer, El Cajon High School, Agriculture Teacher

Norma Hirsch, El Cajon High School, Homemaking Teacher

Phil Lea, Grossmont Union High School District Chief of Building and Grounds

Jerry Levendowski, Researcher-Teacher Trainer, Bureau of Business Education, Sacramento

Ken Maynard, Regional Supervisor, Agriculture Education, State Department of Education.

George Melbrod, Business Education Chairman, Poway

Jack Nowell, Labor Analyst, San Diego Office of Employment

Claire O'Brien, Consultant, Business Education, Bureau of Business Education, Sacramento

Al Paul, Director, Vocational Education, Grossmont College

Harry Riley and Robert Moorhouse, Grossmont Union High School District Adult School.

Deryl Shryock, Director of Safety and Training, Ryan Aeronautics

Barney Smiley, Plant Supervisor, Fowler Engineering

William Steinberg, Specialist, Vocational Education, San Diego City Schools.

Robert Tobi, Supervisor, Industrial Education, Bureau of Industrial Education, Los Angeles

III. SUMMARY OF MAJOR RECOMMENDATIONS*

A. CURRICULAR

The committee recognized that the present program of vocational education[1] is a good basis for building a more effective program. We believe the following curricular changes are necessary:

1. Implement a four-track plan (See Page 6a) within the school, according to the student's commitment,
2. Provide more effective vocational orientation at the 8th grade level,
3. Establish a vocational exploratory program at the 9th grade,
4. Create interdisciplinary[2] coordination in all related courses in high school.
5. Provide a concentration of vocational classes in the 11th and 12th grades,
6. Provide final specific occupational[3] training near the end of the high school program, and
7. Establish a District responsibility for placing students in gainful employment.

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* Section IV, which follows, gives more detailed information on the major recommendations with some suggestions for implementation--also additional recommendations.

[1]--Vocational Education-The intended meaning of vocational education, as used in this report, is all education that is related to the development of skills and knowledges that can be applied to employment.

[2]--Interdisciplinary-The term applies to the interrelationship of any two or more distinct studies or disciplines of knowledge.

[3]--Occupational Education-Education which teaches skills and knowledges closely related to a job family.

IV. SPECIFIC CONCLUSIONS AND RECOMMENDATIONS - CURRICULAR

C. CURRICULAR

1. Four Track Plan

From 1962 through 1964, personnel of this District worked under an NDEA grant, to find out how to improve the education of the "average" student. "Studies In Success," the published result of the efforts of many dedicated teachers and administrators, has been used as a guide by school districts throughout the nation. One of the most significant results of all the research and experiences was the development of the Student Typology With Educational Relevance (final chart in the Appendix).

The Committee believes in and supports this design for meeting student needs. It has developed a chart for vocational education based on the four typologies, which will serve as a basic pattern of vocational and occupational education for all students.

To complete implementation, the four levels of educational commitment will require a major reorganization of the curricular structure. The Master Plan Committee recommends that an immediate beginning be made at the third and fourth levels - where need is the greatest.

A second and important recommendation in this area is that all students should be able to take a vocational education course as a sixth subject regardless of grade point average.

> It may become vital at any time during a student's four years of high school (but most likely during the senior year), that he or she prepare for self-support. Present policy requires a B average for the student to take a sixth subject, but it is most often necessary for those with less than a B average to take occupational education electives.

4 TRACK STUDENT TYPOLOGY *

PRESENT GROUPING	SUGGESTED TRACKS	EDUCATIONAL COMMITMENT	SUGGESTED GROUPING
I. College Preparatory	I. Honors (Univ. Prep.) College Prep (Regular College Prep)	4 or more years of college Continuing education (at least 4 years)	1. Professional Semi-Professional - Managerial
	II. College Prep - Technical	2 or more years of college (at least junior college) Continuing education	2. Two year degree - Technical or Managerial
II. Applied Arts	III. General Occupational	12-14 grades or equivalent on-the-job training occupational training	3. Skilled level
	IV. Terminal	12th grade plus special occupational training	4. Semi-skilled work after graduation

*This plan is based upon the student typology as developed by Dr. Leon M. Lessinger.

Students may change tracks if their realistic commitment to an education level changes.

2. 8th Grade Orientation

The committee believes that Vocational Education cannot be effective without adequate vocational guidance - beginning in the junior high school.

Vocational educators are concerned that clear and stimulating information on career development opportunities on the high school level is not being given to junior high school students and their parents before scheduling.

The Committee recommends that films, slides, and brochures explaining the district's Vocational Education programs be produced for this use. Vocational teachers should visit the feeder junior high schools to exhibit the pictures and explain the programs.

3. 9th Grade Exploratory

A General Technical Orientation course (G.T.O.) should be offered in the ninth grade to all district students, since all need to make realistic career choices at this level. Course material should include:

An introduction to the world of work.
Concrete experiences and some rudimentary skill development in several disciplines.
Career information from speakers and through structured field trips.

The disciplines should vary according to educational commitment and to ability grouping.

A course of this kind at this time would have many advantages. One is that it would prevent much wasted time and floundering among course offerings by many students in an effort to find a career goal they are willing to work for.

4. 10th Grade Interdisciplinary

In the field of vocational education, the advantage of organizing curricula as interdisciplines is already evident. In the old order of Industrial Arts disciplines, welding and riveting as means of fabrication were parts of a larger discipline known as metalworking. Fabrication of wood products with glue and nails was limited to the course known as woodworking; bolts nuts, and other fasteners to auto-mechanics; and soldering wire and wiring of components to radio.

Today, with manufacturing and assembly being done in so many ways with so many materials, an interdisciplinary course covering all types of fabrication is much more appropriate preparation for a vocational student who may wish to enter the manufacturing field.

The committee recommends that further study be made of four kinds of interdisciplinary courses.

General Technical Orientation: is multi-disciplinary by department.

Technical: technical education combined with English, math and science.

Industrial Arts: interdisciplinary between areas of industrial arts such as metal, electrical, and math combined.

Vocational Technical: the Santana Plan, another example of interdisciplinary courses.

5. 11th and 12th Grade Vocational Sequences

Students in the second, third, and fourth tracks of educational commitment (Technical, General, and Terminal) need up-to-date vocational education in their 11th and 12th years - either to prepare them for junior college or a job. These years must include:

The highest level of related basic education for future adaptation to technical changes and upward job mobility.

A foundation for adequate saleable skills for those seeking job placement upon graduation.

Emphasis must be placed on "families" of skills and trainigg for job clusters.

Evidence indicates that for persons of lower vocational capabilities, there is a need for training to enter and remain employed in a local business - industry for which there will be a continuing demand. Persons with more specialized and higher level training and skills have demonstrated greater mobility in following labor markets and maintaining employment. Those with lower capabilities tend to remain in one locale whether employed or not.

The smaller schools in the district experience difficulty in providing the necessary enrollment for the variety of vocational programs necessary to meet the needs of students. Realizing the problems involved, the committee recommends that a feasibility study be made to find out if student population can be increased in the smaller schools so that vocational education needs can be met.

The committee recommends that the district should continue to offer and to expand special vocational programs at selected high schools - as part of a Comprehensive High School District plan for vocational education.

This organization of subject matter offers the most economical plan for a quality program flexible enough to meet student, community, and industry's needs.

Since these vocational education programs are distributed over a large geographical area, district transportation or some other method of moving the student to the equipment must be found. Another possibility, the provision of mobile equipment for special occupational training. should be studied.

6. 11th and 12th Grade Occupational

Occupational Education, a part of Vocational Education, is concerned with developing saleable skills in students in a short concentrated course. It is the final step in preparing the student for employment and usually takes place in the senior year or possibly the summer after graduation.

An occupational course may be part of a vocational course. It may be partly taught or supported by industry or business. Occupational courses have become necessary because of the rapidly changing skill needs of industry and the short lead time industry has to get into production.

One example is the cooperative aircraft assemblers course described in the Appendix which prepared thirty Grossmont District graduates for jobs at Ryan.

Possible Occupational Curricula

During the course of the committee's summer work, certain occupational skills were recommended by several consultants as being presently in demand and as having future potential for providing jobs for students needing work on graduation. These can be taught in the high school either as part of a regular vocational curriculum extended day, or in specialized summer school courses.

No training should be provided until it has been determined by use of an an advisory committee of local employers that there are jobs available for students who have mastered these skills.

Support by industry (provision of staff and equipment*) has already been indicated for some of the following:

* At Los Angeles Trade-Tech, industry has equipped entire shops and laboratories. The District VE Council should have time provided to search for the maximum assistance from business and industry in order to save district funds.

Aircraft Assembly

Duplicating Clerk

Electro-Mechanical Repair (small appliances)

Electronic Assembly

Food Service Training

Geriatric Aide

Home Health Aide

Vocational-General Metals

Landscape Maintenance

Metals and Plastic Fabrication (fiberglass)

Nurses' Aide

Nursery School Attendant

Ornamental Horticulture

Service Station Operation

Small Animal Care

7. Continuing Education

The committee believes that high school need not be considered terminal for any student. The committee recommends that a list be compiled of all course offerings in the high schools, junior colleges, adult programs, service schools, business and trade schools, and apprenticeship programs that are available to our graduates in San Diego County. This information should be made available to all students and they should be counseled in how to use it.

The committee recommends that adult education (extended day) and junior college plan for specialized and advanced support of vocational and occupational education at the secondary level.

> The high school's prime responsibility is to prepare students in broad occupational families. This will enable these future wage earners to have job mobility necessary to cope with industrial changes.

In many industrial and business occupations a need exists for advanced training programs beyond the high school. Here the potential specialist can develop skills at a level of sophistication which places him in a highly employable position.

IV. SPECIFIC CONCLUSIONS AND RECOMMENDATIONS-ORGANIZATIONAL

B. ORGANIZATIONAL-COUNCILS AND COMMITTEES

1. Vocational Education Council and Committees

The committee recommends that a district-wide Vocational Education Council be established for the Grossmont Union High School District.

(See Suggested Organizational Chart, page 15a) The committee recommends:

a. The V.E. Council have the continuing responsibility for the selection, implementation and evaluation of vocational education programs in the District. At present, there is no existing organization or committee capable of handling this responsibility.

b. The V.E. Council include representation from all schools.

c. The V.E. Council coordinate V.E. curriculums with junior high schools, adult education, and junior colleges.

d. The V.E. Council coordinate the activities of special ad hoc committees to aid it in its decisions. Suggested ad hoc committees are:

1. Capital outlay list revision, facilities, and services evaluation committee. Use of mobile V.E. equipment or courses.

2. Screening and recommendation of V.E. educational media such as vocational files, etc.

3. Special committees to work with specific advisory committees; and a research committee to study means to upgrade courses and techniques of teaching in V.E. classes.

e. The V.E. Council be responsible for all vocational equipment - to make sure that unused or surplus equipment is placed in schools that demonstrate a need.

Justification

The V.E. Council is necessary as the basic organizational structure for communication and coordination of all V.E. teachers, the District administration, and V.E. Advisory Councils and committees.

The V.E. Council is interdisciplinary in nature. All teachers in the following departments are represented: Industrial Arts, Business Education, Homemaking, Agriculture, and Art.

The V. E. Council is needed to assist the district in the development, research, and preparation for funding of new programs through V.E.A. and other sources.

The V.E.Council will work with the Advisory Council to obtain financial, material, and staff support from business and industry.

Implementation

The V.E. Council shall begin work in October, 1966. A temporary chairman shall be appointed from the summer committee. This chairman will prepare an explanatory letter about the V.E. Council, mail this letter to all schools, and chair the first session of the V.E.Council.

Each local school shall select one representative and an alternate for the V.E.Council.

The local school representative to the V.E.Council will communicate the actions of the V.E.Council to the school V.E.Committee.

The V.E.Council will set up ad hoc committees as needed to study specific questions related to V.E. in the district.

The V.E.Council will prepare a master V.E. Resource Directory of all members of the V.E. Advisory Councils for distribution to all V.E. teachers.

Because of the volume of work given to this council, work must be done on a paid basis.

One of the major duties of the District Vocational Council will be to evaluate and recommend the addition of vocational and occupational courses to the total curriculum. The committee recommends that the following guidelines be used to evaluate recommended vocational courses:

a. How was the need for this type of program established.
   1. Advisory Council and an advisory committee in the field of employment.
   2. Survey of industry
   3. Survey of student interest

b. Will employment be available to the student who completes the program?

c. Will there continue to be employment in this area in the future?

d. Can a sufficient number of students be interested in entering the program?

e. Is the cost expenditure for the program justified?

f. Is there other than district financing available? Such as:
   1. Federal or state funds
   2. Industrial loans or grants of materials and equipment.

g. Will there be transferable skills and knowledges to other areas of employment.

h. Is this training now given in junior colleges, adult schools, or private institutions which accept our graduates?

2. Vocational Advisory Council and Committees

The committee recommends that a Vocational Advisory Council composed of persons from local businesses, industries, junior colleges, and unions, be established to advise the school administration and faculty through the Vocational Education Council and to serve the programs of the District.

The summer committee's review of successful vocational education programs has brought to focus one very important fact: in every case, success was either insured or augmented by an advisory council. Advisory councils provide the best means for accurately identifying technological changes and the curricular responses that should be made by vocational education. Industry can, and is, willing to, support education by supplying specialized training personnel and equipment if proper coordination is available. This cooperation can be a major factor in reducing instructional and capital outlay costs.

A further important consideration is that any program, in order to qualify for VEA funds, must be developed through the use of a local advisory council.

The Advisory Groups need to operate at two levels - (see chart, page 15a):

a. The Advisory Council on the administrative level, capable of forecasting the needs of business and industry on which the objectives of the total vocational program should be based.

Areas of responsibility would include the duty to:

Identify needs of the program.
Assist in opening avenues of employment.
Publicize the program and secure community cooperation.
Assist in coordination of interdisciplinary courses.
Assist in arranging and facilitating plant tours, gifts and loans of equipment, supplies, scholarships, grants-in-aid funds, and participation in instruction as technical speakers.
Assist in evaluation of the program.

b. Subject area Vocational Advisory Committees composed of industrial or business specialists to serve as consultants to the Vocational Education Council. Members of this committee should include persons who work as supervisors in the direct entry level of the business or industry. Areas of responsibility would include the duty to:

Recommend standards for that occupations.
Recommend course content.
Recommend space and equipment needed.
Keep the school informed of changes in the occupation.

3. Specific Conclusions and Recommendations - District Organization-Coordination

Acceptance of the Vocational Education Master Plan must imply acceptance of the responsibility for its implementation and evaluation.

a. The plan must be [illegible]e kept alive and current. Continuous critical analysis based on up-to-date data will result in revisions of the Master Plan. The Plan's primary vehicle to keep abreast of current trends and requirements is the proposed District Industrial and Business Advisory Council. To complement this group, the following tasks must be undertaken:

Establish and coordinate in-service training programs for VE teachers with business and industry. (Especially during the summer.)

Coordinate the "specialized entry level skill training" between industry, adult school, and the high school.

Prepare and follow-up applications for funding programs through federal and state moneys. (VEA, NDEA, etc.)

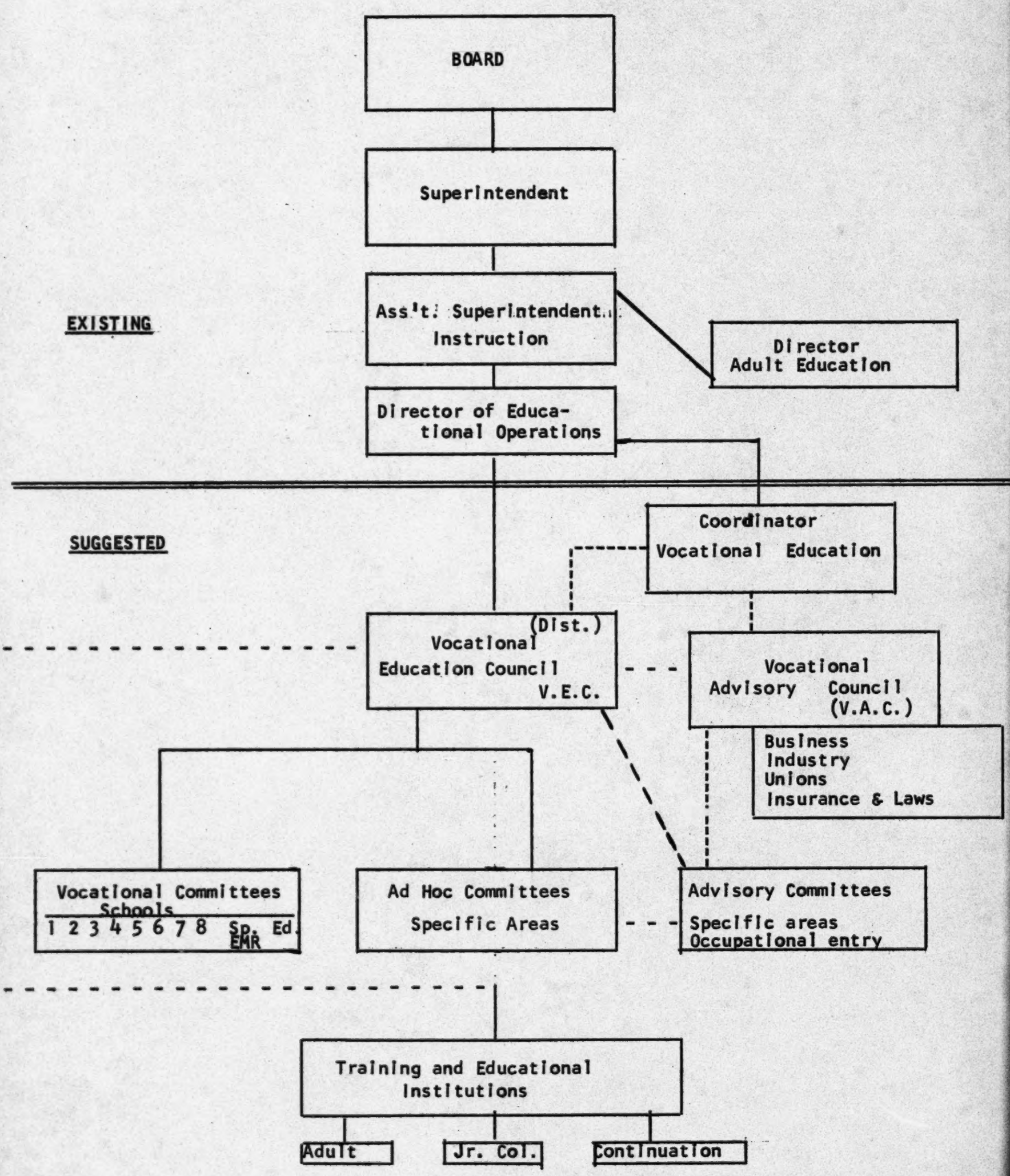
Coordinate efforts to get vocational credentials for industrial arts teachers.

Coordinate efforts of the Industrial and Business Advisory Council.

Do research in vocational and occupational aptitude and interest tests for students.

Coordinate research to govern the feasibility of using mobile labs (trailer or pallet), and if sound, to schedule the use of these programs at the high schools.

SUGGESTED VOCATIONAL EDUCATION ORGANIZATIONAL CHART



Research the cost of new equipment, new programs, and new buildings, as the need arises.

Cooperate in establishing specialized Occupational Education Advisory Committees (electronics, automotive, nursing, etc.)

Maintain contact with junior high schools, junior colleges, private vocational training institutions, adult schools, and the armed forces. Work in the areas of prerequisites, course content, advanced placement, and early matriculation.

Work with the District's counseling staff to develop understandings of job entry requirements and industries' needs so that in conjunction with student's interests and abilities, more effective guidance will result.

b. <u>This plan must be constantly evaluated</u>. Present offerings must undergo a critical analysis based on present and future needs. This can be accomplished in part by the following activities:

Establish a long-range plan for surveying VE students in grades 9-12; incorporate 2 and 5 year follow-up studies of these same students.

Coordinate the use of an evaluative instrument for revision, deletion, and addition of VE courses periodically.

c. <u>This plan must be SOLD to the public, the students, parents, and to other teachers</u>. Needed is an initial "hard-sell" effort followed by a continuous public information program. This selling job will be accomplished by:

Coordinating an in-service training program for all vocational teachers.

Providing vocational education information for other teachers, counselors, and administrators.

Coordinating the selling program on thenneed for VE with the feeder schools, as early as the 5th and 6th grades.

Compiling a booklet on VE offerings in the district to be distributed to teachers, students, parents and counselors.

Coordinating our efforts in vocational education with the other high school districts in the county.

Preparing and giving orientation talks on the overall program to parent groups, community organizations, business, industrial and labor groups.

A public relations program that provides information on new programs, accomplishments of students, etc.

It would seem that the overwhelming task of implementation and evaluation of the Vocational Education Master Plan cannot be delegated to a committee of teachers nor to the present district staff. Therefore, this committee recommends a full-time district person be provided to coordinate the program. It is further recommended such a person be employed upon completion of the work of the Vocational Education Council in the spring of 1967. A person who can give continuing efforts throughout the year to the above and other tasks, will provide the centralized, responsible, assistance VE teachers need to move toward their ultimate objective - to offer sound career development education to all ability levels for all district students.

4. Specific Conclusions and Recommendations - Facilities and Service

The committee recommends that an ad hoc committee of the District VE Council continue to study facilities and services. There have been too many complicating factors to complete this study during the summer. Problems of lack of power and lack of space are the most serious. These have been investigated but lack of time prevented completion of the necessary task.

At the same time, no firm decisions can be made on what specialized occupational preparatory programs will be offered until local school faculties and administration have been consulted and desire to move ahead in a certain direction. There must be commitment at the school level.

The committee recommends that a special study be given by the District VE Council to the possible use of mobile equipment. Training equipment, too expensive to install and keep in one school where it may not be in continuous use, could be installed in vans and moved from school to school for periods of training.

A second recommendation for serious attention is that local industry should be carefully approached for use of its equipment during "off" hours or periods, either at the plant or by moving the equipment to the school. (See example, Cooperative Aircraft Assembler Training with Ryan, in Appendix.

Services: The committee recommends that special arrangements be set up with District personnel responsible for maintenance and that, in some cases, equipment be held in reserve to replace that being repaired.

The maintenance of vocational equipment in operating order is essential to instruction. A breakdown of any machine, even for a few days, may destroy sequential training for the entire school year. Emergency procedures for repairing or replacing instructionally vital equipment should be devised.

The committee recommends:

Preventive maintenance

Emergency maintenance procedures with, in some cases, reserve equipment.

Periodic inspection of all vocational equipment.

The committee recommends that all vocational departments send their separate requests for equipment to an appointed district representative who will attend State surplus sales on a regular basis.

Revision of the Capital Outlay List (See suggested Guidelines for revision of capital outlay list in Appendix.)

5. Placement - A Necessary Function

The committee spent considerable time on a re-evaluation of the placement role of the secondary school in relation to today's economic and social conditions. It urges careful consideration of the following information.

In the past, young people were expected to find their own jobs. Entry job skill requirements were minimal; industry and business were willing to train. More important, an "open door" personnel policy existed so that a young person without experience and who looked like "good material" had a chance to try out for a job - usually at unskilled work. If he wanted to work hard and "learn the business" he could progress as high as his native abilities permitted.

In contrast, the following is now true:

1. There are few unskilled jobs of any kind.
2. Business and industry present a bewildering array of hiring techniques, frightening to the unexperienced applicant.
3. Business and industry give intellectual and skill tests before hiring.

4. Business and industry offer on-the-job training but based on entrance skills already possessed by the applicant.

5. The new worker applying for his first job must compete with older, experienced workers displaced by technological changes in the economy.

6. Once established in a job, even though the job is not compatible with his interests and abilities, the young worker is often unable to make a change. He became "locked in" to unsuitable work.

The committee believes that terminal students need the school's help in finding the right entry job for them. This help can be given in a variety of ways:

By vocational and occupational education that prepares him/her for jobs that are available.

By training the student in job search techniques so he knows how to present himself, how to take employment tests and where and how to look for a job.

By carefully coordinated liaison between the school's vocational departments and the Youth Placement Office. Data on the graduate relative to job placement must be sent to the Youth Placement Office so intelligent assistance can be given.

By the Advisory Council and committees.

By vocational teachers who are well acquainted with local employers.

By cooperative training courses given with business and industry.

6. Other Recommendations (not classified)

a) The Vocational Education Council, in conjunction with the Vocational Advisory Council, should actively explore the possibility of expanding related work experience programs to other areas of vocational education in addition to the distributuve education programs.

b) The Vocational Education Council should provide a form for communicating vocational skills of students to the Youth Placement Office. This can be used for part-time work and placement upon graduation. The use of data processing in this area should be studied, possibly as part of a VEA proposal.

c. The committee recommends that a Vocational Counselor be added to the staff of each school with specific duties related to the vocational guidance and counseling needs of all students. In view of the heavy student load and the many duties assigned to them, the district's counseling staff is doing an admirable job. However, unless the responsibility for carrying out the many duties connected with helping students make wise vocational choices is assigned to one person, these crucially important activities are often neglected because of lack of time. A specialist is needed who is prepared professionally to deal with the world of work, who is sensitized to the needs of average and below students, who can identify the jobs or opportunities best suited to each of his counselees. This special counseling responsibility has been ably demonstrated at two of the district's schools - Mt. Miguel and Grossmont.

The Vocational Counselor, with the local school Vocational Education Committee, should compile and keep a complete vocational file for each student. This file should contain his vocational choices and plans, test data, vocational education courses taken and special skills developed, in addition to his interests, aptitudes, abilities, and personality traits. The committee highly recommends that individual teachers aid the counselor in the preparation of the file. <u>It would be ideal if a counseling punch card could be prepared</u> to contain all such data for the use of teachers, counselors and the Youth Placement Office. A V.E.A. proposal could provide funds for this experiment.

Some Suggested Duties of the Vocational Counselor:

1. Interview students about vocational choices and plans, prepare survey card, and coordinate the completion of vocational files.

2. Group students by occupational interests and arrange group guidance activities.

3. Collect vocational and occupational information for use of students and teachers, arrange for tours, speakers, etc.

4. Arrange for presentations of vocational education teachers to 8th grade students in meetings prior to scheduling.

5. Aid in the selection of specific occupational courses to be offered at that school.

6. Aid district personnel in continuing research (survey, follow-up, etc.) of students and graduates.

7. Act as a resource person to the community and to the faculty.

d. The committee recommends that specific area occupational ad hoc committees compile and distribute job description booklets to counselors and specific area vocational teachers listing by Dictionary of Occupational Job Titles and numbers those entry jobs for which the student completing each occupational course will be prepared.

e. The committee recommends the Vocational Education Council conduct necessary surveys:

(1) To determine existing facilities in all schools.

(2) To discover employment needs of local employers.

f. The committee recommends continuing its in-service training for all vocational education teachers. Some suggestions:

(1) Robert Craig, San Francisco State College, Consultant-Coordinator, Technical Education, will conduct a teacher workshop here, if requested.

(2) Teachers should be encouraged to work in business and industry during Christmas, spring and summer vacation, with advancement credit on salary schedule granted.

(3) The UCLA Department of Vocational-Technical Education will provide training (units) locally required for a vocational credential.

g. Vocational Education teachers should be encouraged financially to join business and technical societies, and more teachers should be given the opportunity to attend conferences and workshops. There is no better way to insure professional growth.

h. The vocational credential should be given recognition on the salary schedule.

I. The committee recommends that (1) a definite plan be developed for a study of the student population to determine educational plans, goals, interests, and aptitudes; and (2) a subsequent follow-up study should be devised to provide for adequate evaluation of the vocational education program.

> The up-dating and continued success of any educational program depends on accurate evaluation of that program. One of the most meaningful measures of the effectiveness of a vocational education program is a follow-up study to determine how accurate and successful the school was in counseling and preparing the student for the world of work. Such a study needs to be done during a two to five year period to be valid. If a complete study of all students is not possible, a district-wide study with a representative sampling should be made.

J. The committee feels strongly that much more effective vocational guidance could be attained if there were some student grouping for this purpose, led by a vocational education teacher or a team of such teachers. Many successful programs of vocational education have used techniques such as DECA clubs, JETS clubs, etc. This could be accomplished during periods when school assemblies (cultural and pep) are now scheduled.

k. The committee recommends the District VE Council investigate

industry as a source of instructional help. This has become necessary because rapid changes in industrial techniques make it impossible for the certificated instructor, who spends his time teaching, to perfect himself in the new skills needed. The present use of occupational aides at Santana is an example of one method of drawing recent industrial experience into classroom instruction.

IMPLEMENTATION:

(1) On a part-time basis, industrial specialists can be hired to assist in skill training (extended day programs).

(2) The industrial specialist can act as a trainer in the regular classroom, working in cooperation with the teacher.

(3) Industrial specialists can act as supervisors, certifying trainees' competency.

(4) The industrial specialist can aid in material and content preparation and acquisition.

C. Proposed Phasing of the Master Plan

Phase I Spring Committee
Phase II Summer Committee
Phase III Fall of 1966

September

1. Presentation of Summary of Master Plan Report to Superintendent's Cabinet.
2. Presentation to Principals' Council
3. Distribution to the District Faculty

October

1. Submission of complete Master Plan Report to Governing Board
2. Formation of local school vocational education committees
3. Selection of school representatives to District VE Council
4. District VE Council selects vocational programs (from proposed list) to be recommended to the Superintendent for adoption. Any VEA proposals for Spring semester 1967 or Summer 1967 must be ready for November 15, 1966 deadline

November

1. Creation of District VE Business and Industrial Advisory Council
2. Selection of VEA proposals to be submitted, if approved, in April 1967
3. Local committees submit to District VE Council for study, requests for equipment and facilities improvements necessary to bring present programs up to vocational training standards
4. After study, requests are submitted to the superintendent and appropriate Faculty Senate committees.

Phase IV

Spring 1967

1. Final development and submission of VEA proposals for 1967-68
2. Beginning of approved occupational courses for terminal seniors
3. District VE Council reports progress and budget requests to superintendent
4. Vocational Education Director chosen

Phase V

Summer 1967

1. District VE Council develops specific occupational curricula, assisted by advisory committees in the areas, and completes work on the Master Plan . . . as part of a continuing VEA proprosal

2. Summer occupational courses for undergraduates and graduates are offered

Phase VI

1968-69-70

1. Evaluation and follow-up of results of previous years' work by District VE Council
2. Continuing cooperation with Advisory Councils and committees
3. Continuing work on interdisciplinary curricula
4. Continuing work on improvements in vocational guidance
5. Continuing research on student needs for vocational education
6. Development of new occupational curricula based on labor market requirements
7. Implementation of necessary improvements and adjustments, as funding permits

APPENDIX

Membership -- Master Plan Committees - Phases I and II

Spring Committee - Phase I:

Grossmont.....	Sherril Hatfield	Dale Cummings
Helix.....	Hazel Osborne	Robert Pollock
El Cajon.....	Annabelle Jump	Andy Smith
Mount Miguel.....	Warren Keller	Larry Landon
El Capitan.....	Dudley Graham	Paul Palmer
Granite Hills.....	Vyrl Burghart	Vern Hill
Monte Vista.....	Richard Snow	Don Gilmore
Santana.....	John Drenth	Don Quatrochi
Homemaking.....	Betty Womack	
Agriculture.....	Jim Dyer	
District.....	Robert C. Brady	

Summer Committee - Phase II:

Grossmont.....	Dale Cummings	
Helix.....	Robert Pollock	
El Cajon.....	Andy Smith	
Mount Miguel.....	Larry Landon	
El Capitan.....	Paul Palmer	Dudley Graham
Granite Hills.....	Vyrl Burghart	
Monte Vista.....	Al Dionne	
Santana.....	Don Quatrochi	
Vocational Guidance.....	George Glaeser	
District.....	Virginia Clapp	

RESEARCH

A. This committee suspected that many of our students being prepared for college and university careers were not successful in this endeavor. Research was undertaken and existing studies consulted to determine if this conclusion was valid.

1. A study was made of the 1965 graduates of El Capitan High School who attended Grossmont College. Seventy-four of the one hundred fifty-eight students (48.7 per cent) were on probation at the end of the first semester. Some of these students had already withdrawn but were included because they had received credit in the 6-week orientation course. Table I, page , summarizes the data on the students.

TABLE I

1965 EL CAPITAN HIGH SCHOOL

GRADUATES ATTENDING

GROSSMONT COLLEGE

SCAT	Total Students		1st Semester Grades			
			2.0 and Above		Below 2.0	
Total Score*	Number	Percent	Number	Percent	Number	Percent
9	11	7.2	9	81.8	2	18.2
8	12	7.9	8	66.7	4	33.3
7	29	19.1	16	55.2	13	44.8
6	42	27.6	23	54.8	19	45.2
5	29	19.1	13	44.8	16	55.2
4	15	9.9	6	40.0	9	60.0
3	1	.7	0	----	1	100.0
2	4	2.6	0	----	4	100.0
1	2	1.3	0	----	2	100.0
No Test Data	7	4.6	3	42.9	4	57.1
Total	152	100.0	78	51.3	74	48.7

* Scores in Stanines

2. Table II is extracted from Relative Average Performances of Grossmont Union High School District Graduates (1962) During their Freshman Year at San Diego State College. Specifically, the following conclusion was made by the author: "...some forty percent of the Grossmont District graduate sample were on academic probation during their first year of attendance at San Diego State College. Eighteen percent were disqualified during the year. About forty-two percent of students who were placed on probation...were disqualified during the following semester."

TABLE II

ANALYSIS OF ACADEMIC PERFORMANCE OF 260 SAN DIEGO STATE COLLEGE FRESHMEN WHO GRADUATED FROM GROSSMONT UNION HIGH SCHOOL DISTRICT IN 1962

	Number of Students	Percent
On Probation, Freshman Year	104	40.0
Disqualified, Freshman Year	46	18.0
Percent on Probation, Disqualified Later	43	41.8
Withdrawals or No Return During or After First Semester	28	11.0

3. From John Kleinfelter's follow-up study of the class of 1965 at Mount Miguel High School, the following comments were made by respondents in answer to the question "How could high school help more?"

"2. More opportunity to broaden education through art, drama, and business subjects, especially for the college prep students.

5. High school courses geared more to goal.

10. Greater opportunity for practical experience provided.

12. Opportunities for specialization in areas like Data Processing."

From the class of 541 students, 231 (42.7 percent) enrolled at Grossmont College. At the end of their first year, 98 (42.4 percent) were on probation, 99 (42.9 percent) were not on probation, and 34 (14.8 percent) earned no credit. Of the ten students reported attending the University of California branches, only two (20%) made below a C average.

B. The committee conducted a study of enrollments and expenditures of vocational education in the district. Vocational education was considered as Agriculture, Art, Business Education, Home Economics and Industrial Arts.

Table III shows the student hour enrollment in each area of vocational education by schools and the total for the district.

Table IV shows the expenditures for the vocational education departments on instructional supplies during the past school year. These amounts are compared with student enrollment and the totals for the district.

TABLE III

ENROLLMENT AS OF JUNE 17, 1966
(2nd Semester 1965-1966)

	01	02	03	04	05	06	07	08	Total
TOTAL STUDENT HOURS	12,287	12,129	9,198	11,393	7,049	8,016	7,401	5,954	74,821
010 AGRICUL.									
Enrol.hours	-	-	114	-	-	-	-	-	114
% of total			1.24						.15
020 ART									
Enrol.hours	247	468	379	247	836	196	187	188	2248
% of total	2.01	3.86	4.12	2.19	4.77	2.45	2.50	3.16	3.02
040 BUS.ED.									
Enrol.hours	1176	869	852	1065	665	754	589	759	6729
% of total	9.57	7.16	8.26	9.35	9.43	9.41	7.96	12.75	7.05
070 HMKG.									
Enrol.hours	184	157	214	201	138	153	110	115	1272
% of total	1.50	1.29	2.35	1.76	1.96	1.91	1.49	1.93	1.71
080 IND.ARTS									
Enrol.hours	458	535	561	600	458	441	352	417	3820
% of total	3.95	4.41	6.10	5.27	6.47	5.50	4.76	7.00	5.14
TOTAL HOURS	2065	2019	2180	2113	1595	1544	1288	1479	14135
% OF TOTAL	16.31	16.75	23.05	18.55	22.63	19.26	16.73	24.84	19.08

TABLE IV

EXPENDITURES OF 5200 (INSTRUCTIONAL SUPPLIES) 4/30/66

SCHOOLS	01	02	03	04	05	06	07	08	TOTAL
010 AGRICUL.									
5200 Budget	-	-	1100	-	-	-	-	-	
*St.enroll.	-	-	114	-	-	-	-	-	
020 ART	2915	3684	8388	2720	2767	2744	1432	2263	21913
Enrol.	247	468	379	247	336	196	187	188	2248
$/Stud.	11.80	7.87	8.39	11.01	8.33	14.00	7.66	12.04	9.75
% Enrol.	10.7	20.0	21.1	11.4	25.6	12.7	13.3	16.7	16.1
040 BUS.ED.	1902	1230	1200	2000	1272	765	1486	1123	9978
Enrol.	1176	869	852	1065	665	754	589	759	6729
$/Stud.	1.62	1.42	1.41	1.88	1.91	1.02	.83	1.48	1.48
% Enrol.	50.9	37.2	47.4	49.2	50.7	48.9	42.8	67.6	48.1
070 HOME ECON.	1080	780	700	950	712	615	621	80	5538
Enrol.	184	157	214	201	138	153	110	115	1272
$/Stud.	5.87	4.97	3.27	4.75	5.16	4.02	5.65	.70	4.35
% Enrol.	8.0	6.7	11.9	9.2	10.5	9.9	7.8	10.2	9.1
080 IND.ARTS	3539	4291	7129	4856	4307	3227	2780	4935	35064
Enrol.	458	535	561	600	456	441	352	417	3820
$/Stud.	7.73	8.02	12.71	8.09	9.45	7.32	7.90	11.83	9.18
% Enrol.	19.8	22.9	31.2	27.7	34.8	28.6	25.0	37.1	27.3
DIST.ENROLL. (as of 5/31/66)	2313	2339	1796	2164	1311	1542	1410	1123	13998
TOTAL STUDENT HOURS	12287	12129	9198	11393	7049	8016	7401	5954	
% OF STUDENT BODY ENROLLED IN VOC. EDUC.CLASSES	16.5	16.7	12.8	15.5	9.4	11.0	10.1	8.0	100.0
									72493
EMR.ENROLL.	49								14069

*Enrollment as of 6/17/66

4. Gordon A. Shield's Fourth Year Follow-Up Study of Grossmont Graduates, Class of 1961 produced the following data significant to the committee's area of concern:

   a. 292 respondents from a class of 438 students.
   b. 113 employed full time including 33 in armed forces; 52 employed part time, and 18 seeking employment.
   c. 64 were attending 4 year colleges, and 33 were attending 2 year colleges.
   d. 45 had received AB or BS degrees; 9, AA degrees, and 65 had plans to return to college although not now enrolled.
   e. Attrition rate at Grossmont College was 46.6 percent for men and 73.9 percent for women.
   f. Attrition rate at San Diego State College was 34.4 percent for men, and 49.2 percent for women.
   g. Twice as many women as men had received degrees.

   The conclusions reached by the author are:

   "1) Is there undue emphasis on preparation for college at Grossmont High School when in reality more curriculum offerings and counseling should be directed to vocational orientation? Should the attrition rate among college students be emphasized and more stress placed on having students realize that going to work may come fairly soon after graduation? It might be well to consider bringing these facts to the attention of both students and parents as early as the sophomore year and creating a more realistic understanding of the preparation needed for success in college, the competition faced, the awareness of other educational programs, (LVN, Adult School, Junior College, night classes) and the start of job planning.

   2) Where can a student dropping from college find help in getting a job? In spite of the work of public employment agencies at the state and college levels, most students still find work through friends, relatives or on their own.

   3) Are students and their parents made aware in high school that most who go to college stay $2\frac{1}{2}$ to 3 years for an AA degree, and $4\frac{1}{2}$ to 5 years for an AB or BS degree?"

5. In 1963, Dudley Graham conducted an academic survey of courses taken by graduates of El Capitan High School who had little chance of success in higher education. His conclusions revealed that although the test scores validated (by actual performance in colleges) these students would have little chance (less than 20 percent) of success in higher education, their course patterns were not significantly different from the patterns of college preparatory students. The course designations, however, were different - - English A instead of English C. Boys in the study group took one (Carnegie unit) more of vocational education in the Industrial Arts area; girls took one additional unit in Business Education. The college preparatory student took this additional unit in foreign language. Both groups of students earned more than the 20 units required for graduation.

A Summer Experiment in Aircraft Assembly
August, 1966

Conducted by:

Vocational Education Master Plan Committee

Grossmont Adult School

Ryan Aeronautical Company

Personnel:

Joe Kent, Training Supervisor, Ryan Aeronautical Company
Bob Pollock, Instructor, Helix High School
Don Quatrochi, Instructor, Santana High School
Deryl Shryock, Director of Training and Safety, Ryan Aeronautical Company

Aircraft Assembly Experiment

August, 1966

PURPOSE:

To train high school graduates (eighteen years of age) with an industrial education background in those job entry skills specifically related to aircraft assembly.

SPONSORSHIP:

The aircraft assembly program was conducted as a cooperative experiment with the Grossmont Union High School District Industrial Education teachers, Grossmont Adult School, the Vocational Education Master Plan Committee, and Ryan Aeronautical Company.

SELECTION OF STUDENTS:

The Vocational Education Master Plan Committee contacted each of our eight high schools requesting recommendations of students for this training program. All high schools responded and from these recommendations thirty students were selected on the basis of reliability and performance, and considered by their instructors to be better than average in their industrial classes.

STUDENT SURVEY:

A survey was administered to this training group to determine the students' industrial education background, work experience, and problems encountered in seeking postgraduate employment. A copy of the survey appears in the appendix with an itemized analysis of the questionnaire. The questionnaire revealed the students averaged approximately two years of mathematics and six and one half years of industrial education classes. Their work experience varied from selling tomatoes, washing dishes, and odd jobs, to maintenance work. None of these jobs required any degree of skill; only sixteen of the group held postgraduate jobs. The wage for these sixteen students varied from $1.00 to $1.75 an hour or an average of $1.38 per hour. The major problem encountered by students seeking employment was the lack of skill training or experience. Twenty-four of the students plan to continue their education, five were undecided, and only one was not interested in some postgraduate education. Twenty-two students planned careers which were reflected in their high school courses. Only one student was working at this time in his vocational major (radio-television repair).

All but two of the students felt this type of specific training should be offered in high school.

FACILITIES, EQUIPMENT AND MATERIALS:

A survey was made of the District's facilities to determine a site location for the training program. The electronics lab at El Cajon High School was chosen because of its central location and size of the facility. All of the equipment and materials for the program which were provided by Ryan Aeronautical included:

EQUIPMENT:

25 air driven drill motors
20 riveting guns
2 portable rivet squeezers
1 huk gun
14 additional machinists vises
200 twist drills
25 counter sinking depth stops
assorted assembly hand tools

MATERIALS:

50 pounds of various sized rivets
300 pounds of aluminum training blanks
50 formed practice components
4 air manifolds
6 heavy duty main air lines
30 12' extension air hoses
4 air hose bibs or connections

TRAINING ACTIVITIES:

The purpose of the program was to develop the skills needed in aircraft assembly, primarily free hand drilling, countersinking, layout, and riveting.

The trainees developed a high proficiency in the handling of these tools and in judging the quality of their work. Originally, the training program was set up on a basis of three hours per day, five days per week for one month. However, the desirability and motivation of the trainees was at such a high level, the training program was adjusted to seven hours a day for two to three weeks. When the trainees reached the job proficiency level, they were hired by Ryan and incorporated into the assembly line. This was accomplished by six of the trainees in one and a half weeks, another six in two weeks, a third group of six in two and one half weeks and the remainder at the end of the three week training period.

RELATED ACTIVITIES:

An orientation unit on the aircraft industry was presented to the group by Ryan's Training Director, Deryl Shryock. It should be noted that both of Ryan's representatives pointed out to the students that aircraft assembly was a good point from which to start a career and provided opportunities for movement into other specialized areas such as plastics, electronics, machine shop, quality control, drafting and design. These men also stressed Ryan's policy of financially supporting workers seeking to continue their education. Each student was given help in filling out his application for employment and was given instruction in proper interview techniques.

Student Survey - Aircraft Assembly

1. From what school did you graduate? _____

2. What class or classes did you find helpful in preparing you for this class in aircraft assembly?

   _____ _____ _____

3. How did you go about looking for a job this summer? _____

   _____

4. What problems did you find in seeking employment? _____

   _____

5. If you obtained a job this summer, what was it? _____

   _____

6. How much did you job pay? $_____ per _____.

7. How many hours are you presently spending per day in aircraft assembly training? _____

8. Are you planning to continue your education? _____ Where? _____

   _____ What major? _____

9. List the different types of jobs you have held.

   _____

   _____

   _____

10. Do you feel specific job training such as this program should be offered during your senior year in high school? _____

11. What specific type of work would you eventually like to do? _____

    _____

12. List <u>all</u> the shop classes and math classes you completed in high school

    _____

    _____

    _____

    _____

    _____

    _____

SELECTION OF STUDENTS BY SCHOOL

Grossmont High School	1
Helix High School	4
El Cajon High School	3
Mount Miguel High School	4
El Capitan High School	3
Granite Hills High School	7
Monte Vista High School	4
Santana High School	4
TOTAL NUMBER OF STUDENTS IN TRAINING PROGRAM:	30

TOTAL NUMBER OF YEARS OF INDUSTRIAL ARTS AND MATH CLASSES TAKEN BY GROUP

Mechanical Drawing	22½	Practical Math	3
Electricity/Electronics	29	Math R	1
Graphic Arts	6	Math I	15
Woodshop	35	Algebra I	19
Metalshop	37½	Geometry	12
Auto Mechanics	42½	Algebra II	6
General Industrial Arts	2	Advanced Senior Math	1
Photography	9		
Crafts	6		

A STUDENT TYPOLOGY WITH EDUCATIONAL RELEVAN

Educational Commitment Levels	Occupational Levels	Complexity Levels	Activities	Individual Characteristics	High School Curriculum	Aptitudes	Reasoni Develop ment
I Professional 4 yr. college plus Graduate study	Mathematicians Scientists Engineers	Abstraction (high degree) Decision making Synthesis	Research Directs and plans Designs new Equipment	Idea oriented Works alone or with groups	College prep plus individual study	Mathematical & mechanical inclination Intellectual curiosity	Applies princip of logi and sci tific thinkin Uses no verbal symboli
II Technical Arts 2 yr. college plus on-the-job training Special schools	Technicians Supervisors Foremen (Support for Level I)	Problem solving Applies principles & concepts Comprehends and uses ideas	Uses research techniques Improves design and production methods Trained in laboratory methods	Idea and thing oriented Learns abstraction through concrete application	Technical Arts Basic science Math core plus shop courses plus work experience	Spacial & form perception Attention to detail	Underst & evalu scienti data Interpr variety written oral, d grammat instruc tions
III Vocational Ed. High school plus Apprenticeship On-the-job training Trade School	Factory and Bldg. Trades workers Skilled mechanics Repairmen	Reads and applies instructions Uses standard procedures with some variables	Works as part of a production system Has power tools	Thing oriented Pragmatic Gains insight through experience	Applied Arts Basic core + specialization + work experience	Arm-hand coordination Depth perception Accuracy	Uses pr ples o rationa systems Common sense approac
IV Manual Skills Modified High School Diploma	Helpers Machine tenders Assembly workers	Carries out simple instructions under supervision No variables	Works with hands or uses simple tools	Thing oriented Low verbal ability Motivation difficult	Self-contained classroom approach Training for specific jobs	Physical and manual dexterity	Accepts directi

Developed by Dr. Le
and Mrs.

NT TYPOLOGY WITH EDUCATIONAL RELEVANCE						
ual er- s	High School Curriculum	Aptitudes	Reasoning Development	Mathematical Development	Language Development Reading-Writing-Oral	Guidance Requirements
d alone h	College prep plus individual study	Mathematical & mechanical inclination Intellectual curiosity	Applies principles of logical and scientific thinking Uses non-verbal symbolism	Original application of theoretical math concepts	Expression of highly tonative meanings Facility for exact communication	Assistance with self-knowledge Stimulate study of possible careers Vocational exploration
nd ed ab- ion h te ation	Technical Arts Basic science Math core plus shop courses plus work experience	Spacial & form perception Attention to detail	Understands & evaluates scientific data Interprets variety of written, oral, diagrammatic instructions	Standard application of advanced math	Understands variety of technical instructions	More direction in high school & post-high school educational planning. Assistance with int-aptitude pattern
ed tic in- h ence	Applied Arts Basic core + specialization + work experience	Arm-hand coordination Depth perception Accuracy	Uses principles of rational systems Common sense approach	Arithmetic including fractions, decimals, percentage	Reads technical material in own field	Earlier vocational goal setting Motivation through occupational contacts Realistic aspiration level
ed rbal y tion ult	Self-contained classroom approach Training for specific jobs	Physical and manual dexterity	Accepts direction	Addition and subtraction	Reads simple materials with difficulty	Realistic vocational planning Job placement responsibility

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